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# Appendices

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LIST OF REFERENCE SOURCES

Source No.	Reference Documents
1	Workpaper 1 B, International Cost and Revenue Analysis, FY 1998, Summary Description and Documentation Volume 2, Technical Description
2	Exhibit 3C, SIRVO – MIDAS Interface, Training Guide, February, 1996
3	USPS Response to Third Notice of International Mail Data Requirements, Order No. 1240
4	Exhibit 3B, System for International Revenue and Volume/Inbound, Reference Manual, February, 1994
5	Workpaper 1 E, International Cost and Revenue Analysis, FY 1998, Summary Description and Documentation, Appendices – Part 3 of 6
6	File: ICRAPRC4.XLS; Sheet: TRACS Input; Cells B1 to CK38.
7	USPS Response to Second Notice of International Mail Data Requirements, Order No. 1236
8	USPS Response to Fourth Notice of International Mail Data Requirements, Order No. 1244
9	Billing, payment, and Accrual Process for Terminal Dues and International Transportation Cost (Paper attached to FY 1998 International Cost and Revenue Analysis Report – Postal Service Version)
10	Workpaper 1 H, International Cost and Revenue Analysis, FY 1998, Summary Description and Documentation, Appendices – Part 6 of 6
11	USPS Response to Fifth Notice of International Mail Data Requirements, Order No. 1246
12	Cohen, et al., A Cross Sectional Comparison and Analysis of Productivity for 21 National Postal Administrations, Printed in Managing Change in Postal and Delivery Industries, edited by Crew and Kleindorfer, Kluwer Academic publishers, 1997

- 13 USPS electronic workpapers, File: **ICRA98IB.XLS**, Sheets IPK981 and IPK982
- 14 Postal Operations Council of the Universal Postal Union, World Round Table on Terminal Dues, Geneva, 3 and 4 February 1999, page 18 (**CEPT TR 1999.1-Doc2**)

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## OUTBOUND INTERNATIONAL SERVICES

### SURFACE

#### *Printed Matter and Small Packets (AO)*

Printed matter includes regular printed matter such as advertising circulars and catalogues, small packets (gifts, samples, merchandise), books and sheet music, and publishers' periodicals. Printed matter has two levels of service — surface and air. Surface printed matter is a non-priority service. Rates are based on weight. There are separate rates to Canada, Mexico, and the rest of the world, reflecting differences in terminal dues and other settlement regimes, and transportation costs. Surface printed matter has different rates for three **subcategories**— Regular Printed Matter, Books and Sheet Music, and Publishers Periodicals.

#### *Publishers' Periodicals*

Publishers' Periodicals is offered only to publishers and registered newsagents for mailings that would qualify for the domestic publishers' periodicals classification if destined within the United States,

#### *International Surface Airlift (ISAL)*

ISAL is a bulk mailing service for the delivery of publications, advertising mail, catalogs, directories, other printed matter, and small packets. Mailers must meet a **50-pound** minimum mailing requirement and presort mail by country. ISAL costs less than airmail, but is much faster than surface AO. Per-piece and per-pound rates are charged. There are different rates for the full service, gateway, and direct shipment

options. Under the full service option, **ISAL** receives air transportation to the domestic gateway city, where it is flown to the destinating country and entered into that country's surface mail system for delivery. Under the gateway option, customers receive a reduced rate for entering **ISAL** shipments at designated US. acceptance cities. An **ISAL** mailer with a minimum of 750 pounds addressed to each destinating country may receive a direct shipment rate if direct transportation from a gateway city can be arranged ahead of time. Rates differ by region, reflecting differences in terminal dues regimes and transportation costs.

#### *ValuePost/Canada*

Value/Post Canada is an **ISAL-equivalent** service that reflects the terminal dues that apply to mail exchanged with Canada Post. There are distinct rates for letters, and for flats. There is a per-piece charge for letters up to one ounce, and for flats up to five ounces. Above these thresholds, both piece and pound charges apply.

#### *Parcel Post*

International parcel post is similar to domestic parcel post. Generally, anything other than personal correspondence may be mailed parcel post. Surface parcel post is a non-priority service comparable to domestic zone-rated parcel post. There is a maximum weight limit that varies from 11 to 70 pounds depending on the destinating country. Single-piece rates are charged. There are different rates for mail destined to Canada, Mexico, and five country groups, reflecting differences in transportation costs and inward land charges.

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*M-Bag Service*

M-Bag service allows a mailer to prepare a direct sack of printed matter weighing between 11 pounds and 66 pounds to a single address. A reduced terminal dues rate of 0.653 SDR/kg applies that reflects its reduced sorting costs.

AIR

*Air Letters and Cards*

Air LC consists of personal correspondence, statements of account, and other business-oriented transactions mail. Mailers are typically individuals, households, and small business enterprises. Single-piece rates are charged. Air LC is offered as a universal service. Rates are weight-based and unzoned, but there are different rates to Canada, Mexico, and the rest of the world. Air letters receive First-Class Mail service in the United States, travel by the most expeditious transportation mode available, and receive airmail or priority treatment in the destinating country.

*Aerogrammes and Post Cards*

An aerogramme consists of a single page that folds into a lightweight, self-sealing envelope. It is designed for personal correspondence. Post cards are not sealed. They are designed for business and personal correspondence. A per-piece rate applies to both. The aerogramme rate is universal. There are different card rates to Canada, Mexico, and the rest of the world.

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***International Priority Airmail (IPA)***

**IPA** is a bulk air service for **LC/AO** mail. Per-piece and per-pound rates are charged. Rates differ by region, reflecting differing terminal dues regimes and transportation costs. Under the non-presort option, mailers must meet a minimum ten-pound volume requirement. Under the presort option, mail must be presorted to destinating country. There are three rate groups. A presorted mailing must have a minimum of ten pounds destined to a specific rate group.

***Printed Matter and Small Packets (AO)***

Air printed matter is a priority service. Rates are based on weight. Rates reflect differences in settlement charge regimes and transportation costs. There are different rates to Canada, Mexico, the rest of the western hemisphere, Asia and Africa, and the Pacific Rim.

***Bulk Letter Service to Canada***

This is a bulk letter service to Canada. Five hundred pieces weighing three ounces or less are needed to qualify for this service. In addition, mailers are required to tray their mail and apply a Canadian post code to each piece. The rates for this service represent a fixed reduction from the Air LC single-piece rate.

***Parcel Post***

Air parcel post is a priority service comparable to domestic priority mail. There are maximum weight limits that **vary** by destinating country. Single-piece rates are charged. There are different rates for mail going to Canada, Central America, and the rest of the world.

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*Express Mail International Service (EMS)*

International EMS may consist of almost any type of document or merchandise. It is the fastest of the international services offered by the Postal Service. EMS receives priority handling in the destinating country, by either the local postal administration or by private courier. There are two levels of service — Custom Designed and On Demand. Custom Designed service follows a prearranged schedule. On Demand service does not. Service is provided to 180 countries. Postage is based on weight. There are distinct rates for Canada, Mexico, Great Britain+ China, Japan, and five other rate groups.

**INITIATIVES**

*Global Package Link (GPL)*

GPL is a bulk mailing system that provides international delivery of packages containing merchandise. GPL is designed to make it easier and less costly for mailers to export goods. The Postal Service provides GPL on a destination country-specific basis to Brazil, Canada, Chile, China (People's Republic of), France, Germany, Hong Kong Special Administrative Region, Japan, Mexico, Singapore, and the United Kingdom.

To qualify for GPL service, a mailer must enter into a service agreement with the Postal Service and send a minimum of 10,000 packages a year. In addition, the mailer must link its information system to that of the Postal Service so that the Postal Service can automatically extract information about each package needed to produce customs forms and package labels and to provide tracking and tracing.



GPL offers premium, standard, and economy service. Service enhancements offered are merchandise return, insurance, customs forms and clearance, and payment of customs duties.

***Global Priority Mail (GPM)***

GPM is an expedited airmail letter service providing delivery of all items mailable as letters or merchandise up to 4 pounds. GPM items receive priority handling in the United States and in destination countries. Single-piece and volume rates are available. Separate rates are available for small envelope, large envelope, boxes, and Variable Weight Service. Variable Weight Service has a single-piece and a bulk rate. For single-piece rates, the mailer must have a minimum of five or more pieces to one or more GPM countries. To qualify for bulk rates, the mail must be separated by geographic rate zone (Western Europe, Pacific Rim, and Canada).

GPM single-piece variable weight option pieces, GPM flat-rate envelopes, and GPM flat-rate boxes with postage affixed may be deposited wherever Express Mail is accepted. On-call or scheduled pickup service is available in cities where GPM is accepted. GPM pieces mailed at volume rates must be deposited at a business mail acceptance unit authorized to receive GPM.

***Global Direct Service***

Global Direct Service to or from Mexico, Canada, Brazil, and Great Britain is available only pursuant to a service agreement between the Postal Service and a qualifying mailer. The mailer tenders to the Postal Service items meeting the applicable makeup and preparation requirements for domestic mail in the country of destination. The Postal

Service transports the items to the destination country for entry into its domestic mail system.

To qualify for Mexico Direct, a mailer must have operations in both the United States and Mexico. In addition, the mailer must agree to send at least 70,000 Mexico Direct items during a **60-day** period. The charge for this service is \$1 .01 per pound or fraction of a pound (plus the applicable Mexican domestic postage). To qualify for Global Direct - Canada **Admail**, a mailer must enter a minimum of 25,000 identical printed matter items that meet the applicable eligibility, makeup, and preparation requirements for Canadian Post domestic Addressed **Admail** service. The size, weight, and level of sortation of the items being mailed determine the rate of postage.

#### *Global Parcel Services (GPS)*

GPS is an inbound parcel delivery service being tested with a limited number of foreign postal administrations. It is described as an inbound mail order fulfillment service. The mail is entered directly into the domestic mailstream, generally as Priority Mail. In FY 1998 GPS was received from only one country.

#### *International Customized Mail (ICM)*

ICM service is available only pursuant to an **ICM** service agreement between the Postal Service and a mailer meeting volume and postage requirements. The mailer must be capable, on an annualized basis, of (1) tendering at least 1 million pounds of international mail to the Postal Service, or (2) paying at least \$2 million in international postage to the Postal Service. There are no published rates for ICM.

Several services are available on ICM terms. They **are** International Surface Airlift (ISAL), **ValuePost**, and Express Mail Service (EMS). Discounts are negotiated on an individual customer basis. For costing purposes, the ICM portions of each of these services are presented collectively as ICM costs in the initiatives section of the **ICRA**.

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## MEASURING THE COSTS, REVENUES AND VOLUMES OF INTERNATIONAL MAIL

This appendix addresses the underlying data sources and the methodology the Postal Service uses to calculate the revenue, pieces, weight, and attributable cost (PRC version) for international mail. The section is organized as follows: (1) outbound revenue, pieces, and weight (RPW); (2) inbound RPW; (3) the attributable costs of standard services; (4) the attributable cost of initiatives; and (5) International Mail Service Incremental Costs. Standard services is a descriptive term used in this appendix to differentiate the traditional or standard international mail services, e.g., air letters and cards, from the new service offerings the Postal Service refers to as initiatives. While the revenues and volumes for the initiatives are collected through the Permit system and other similar census-based systems, their attributable costs are developed using a variety of sources and calculation procedures. The Postal Service also has presented costs it considers to be incremental to International Mail service as a whole. The nature of these costs is discussed in subsection (5) of this Appendix. Responsibility for these costs is discussed in Section IV.

### (1) Outbound Revenue, Pieces, and Weight

The Postal Service develops estimates of revenue, pieces, and weight for outbound mail using five different systems: (1) the Permit system; (2) the Electronic Marketing Reporting System (EMRS); (3) the International Business Information System (IBIS); (4) the Corporate Business Customer Information System (CBCIS); and (5) the System for International Revenue and Volume/ Outbound (SIRV/O). Of the five systems, the first four collect census information as part of the Postal Service's accounting process. In FY 1998, they captured 33 percent of all international outbound volume. Source 1, pp. 7-6 to 7-8 and Table C-I. The fifth system, SIRV/O, is a

statistical sampling system designed to collect revenue, pieces, and weight for international mail not incorporated into the Postal Service's accounting systems. SIRV/O, in turn, is supported by the Military and International Accounting and Dispatch System (MIDAS). Source 1, p. 7-3. This is an operating system that tracks all outbound mail. Source 1, p. 7-1. It provides the weight of mail by UPU class, destination country, and transportation mode. MIDAS, therefore, provides a control weight figure for adjusting the sample (SIRV/O) volume to coincide with a direct measure of the actual weight of International Mail. Source 1, p. 7-1 and Source 2, p. 1. SIRV/O accounted for 67 percent of all international outbound mail in FY 1998.

Table C-I.

Because some mailers enter their mail at offices that do not have the Permit system in place, the **Service** supplements its data systems by obtaining census data on revenue, pieces, and weight from special Postmaster reports and from postage statements and account activity reports. Source 1, p. 9-1. The table below shows the distribution of piece volumes by mail category and data source.

Table C-I

DISTRIBUTION OF OUTBOUND VOLUME  
BY INTERNATIONAL MAIL CATEGORY AND DATA SOURCE

international Mail Category	Data Source	Piece Volume (000) (1)	Percent Distribution of Volume (2)
<b><u>OUTBOUND MAIL</u></b>			
<b>Surface</b>			
Printed Matter & Small Packets, excl. ISAL & Per	SIRV/O	28,215	2.9%
Periodicals	Permit	65,082	6.7%
Parcel Post	SIRV/O	2,312	0.2%
Int'l Surface Airlift	Permit	163,587	16.8%
ValuePost/Canada	Permit		
Subtotal, Surface		259,196	26.7%
<b>Air</b>			
Letters and Letter Packages	SIRV/O	510,053	52.5%
Postcards, Postal Cards, and Aerogrammes	SIRV/O	63,010	6.5%
Printed Matter and Small Packets (AO)	SIRV/O	45,017	4.6%
International Priority Airmail Service	Permit	52,843	5.4%
Bulk Letter Service to Canada	Permit		
Parcel Post	SIRV/O	4,240	0.4%
Express Mail International Service	EMRS	4,694	0.5%
Subtotal, Air		679,857	69.9%
<b>Initiatives</b>			
Global Priority Mail	IBIS/CBCIS		
Global Package Link	Permit+		
Direct Entry/Inbound	Permit		
International Customized Mail	Postage St+		
Subtotal, Initiatives		33,303	3.4%
Total Outbound		972,356	100.0%
Volume from Sample		652,847	67.1%
Volume from Census Information		319,509	32.9%
Total Outbound		972,356	100.0%

Source: FY 1998 ICRA, pp. A-1, A-2, and A-3 and Source 1, pp. 7-6 to 7-8.

Note: Permit + equals Permit system & Postmaster Reports Postage St + equals Postage Statements & Account Activity Reports

categories account for 94 percent of the census data. The other three services, International Express Mail, Global Priority Mail and International Customized Mail are tracked by other accounting systems that are similar to the Permit system in that they directly collect mailer information on revenue, pieces, and weight on a census basis. Express mail data are collected in the EMRS. GPM data come from the IBIS and CBCIS. The IBIS houses information on four of the five GPM services: small envelope, large envelope, boxes, and variable weight. The Variable Weight Service is composed of a single piece service and a bulk service. The IBIS collects the total RPW data for variable weight service, while the CBCIS collects only the bulk service portion. The single-piece service portion is obtained by subtracting the bulk service totals from the combined service totals. Source 1, p. 7-8.

Most of the volume and revenue data for GPL are contained in the Permit system; however, during FY 1998, there were some customers who entered their mail at postal facilities without the Permit system. For this reason, the Postal Service assembled the revenues and volumes from the Postmaster Reports at the applicable facilities. The same problem arose for the mailers using ICM during FY 1998. The revenues and volumes for this service are developed using postage statements from the specific-facility and account activity reports maintained in the International Business Unit (IBU). Source 1, p. 9-I.

Sample Data. The SIRV/O collects data on the lion's share of total outbound mail volume (652.8 million pieces in FY 1998). Table C-I. It collects RPW data for the other six services shown in Table C-I: (1) Surface Printed Matter, (2) Surface Parcel Post, (3) Air Letters and Letter Packages, (4) Air Cards and Aerogrammes, (5) Air Printed Matter, and (6) Air Parcel Post. Source 1, p. 7-7. The SIRV/O also collects RPW data for Periodicals, ISAL, and IPAS. The SIRV/O data is used to develop country-specific information, not total outbound volume for these services. These come from the Permit system, as noted earlier. Source 1, p. 7-7.

The SIRWO is a random sampling system stratified as follows: (1) destination country or country group; (2) Origin Exchange Office (OEO) group; (3) transportation mode (Surface, Air, ISAL); (4) MIDAS container type (e.g., bags, letter trays, flat trays); (5) MIDAS mail category (LC, AO, CP); and, (6) weight. The Postal Service selects a cluster sample within the stratum for measuring revenue, pieces, and weight. Clusters are defined as **mailflow** days where a **mailflow** represents a unique combination of destination foreign city, U.S. origin exchange office, transportation mode, MIDAS container type, and Midas mail category. Source 1, p. 7-3.

MIDAS is the primary component of SIRV/O. It is a network computer system with nodes in all U.S. offices dispatching international mail. Source 1, p. 7-5. It is an automated dispatching system that produces a billing record for the payment of air and surface carriers. It yields a census count of the gross weight (ie., weight of mail + weight of container) of outbound international mail by country, transportation mode, and UPU class. Source 1, pp. 7-1, 7-3, 7-6, 7-7. The weights recorded in this manner, when summed to country, transportation mode, and class, form control totals for the SIRWO estimates. The control totals are used to expand sampled revenues, pieces, and weight to the universe. Source 1, p. 7-7. MIDAS also identifies the active mailflows for the cluster samples, and automatically selects mail containers for sampling, based on the Postal Service's testing schedule and the expected total weight of the **mailflow** 'day. The ultimate sample is a container of mail. Source 1, p. 7-3.

MIDAS collects data on all outbound international mail. The SIRWO supplements the MIDAS system in three important ways. First, MIDAS does not collect information on the number of pieces. Second, MIDAS treats LC and AO mail as a combined total, while the Postal Service needs separate volumes for LC and AO mail for costing and pricing purposes. Third, MIDAS measures the gross weight of mail, *i.e.*, it includes the weight of the mail container in its estimate. The SIRWO sampling system identifies the weight of the mail and of the container separately. The Postal Service,



therefore, is able to adjust the final volume estimates to correct for the difference between the gross weight and the net weight of mail.

The Postal Service uses an auxiliary sampling system independent of the **SIRV/O** to estimate the GPM volume distribution by country. The data residing in the **IBIS** and **CBCIS** do not contain information on destination country. Source 1, p. 7-8. The sampling process is similar to the **SIRV/O** process. The strata are defined as the origin exchange office and destination country. The ultimate sample unit is a container of outbound GPM. GPM is always transported in its own container to ensure expedited handling. Source 1, p. 7-8. The sample data on revenue, pieces, and weight is expanded to the universe on the basis of the sampling fraction and the control totals from the **IBIS** and **CBCIS**. Source 1, p. 7-8. The Postal Service uses the resulting volumes for each GPM service, and the applicable GPM rate schedule, to develop the revenues. Source 1, p. 7-8.

## (2) Inbound Revenue, Pieces, and Weight

The Postal Service's International Accounts Branch (IAB) routinely collects volume information on inbound international mail from the manifests that accompany the mail. Source 1, p. 6-1 and Source 8, Response to Item 2. The data are used to compute settlement charges, which are the revenues the Postal Service receives for delivering inbound mail. Source 1, p. 3-5. Through the manifest process, the Postal Service collects piece and weight data for parcel post, international express mail, and M-bags. For **LC/AO** mail (including inbound **ISAL**), it collects only the weight of the mail. To develop the number of pieces of inbound **LC/AO**, the Service estimates the average number of pieces per kilogram by transportation mode, and country or terminal dues regime. Then, it multiplies the total weight of inbound **LC/AO** mail for each country by the applicable pieces per kilogram. Source 1, p. 8-2 and 8-5. This estimate is derived from the System for International Revenue and Volume/Inbound (**SIRV/I**). As

the table below shows, the SIRV/I estimate of pieces per kilogram is used to calculate piece volumes for 98.6 percent of inbound mail.

The SIRV/I is based on a stratified random sampling system. The strata are defined as foreign origin country, U.S. destination exchange office, and transportation mode (Surface, Air, and ISAL). Source 1, p. 8-1. Each combination of these three

TABLE C-2

SUMMARY OF INBOUND VOLUME BY DATA SOURCE

Mail Category	Data Source	Calculation Method	Piece Volume (000) (1)	Percent Distribution of Volume (2)
Surface LC/AO	SIRV/I	Kg x p/Kg	46,735	7.3%
Surface CP	IAB	N/A	2,142	0.3%
Air LC/AO	SIRV/I	Kg x p/Kg	587,926	91.3%
Air CP	IAB	N/A	2,192	0.3%
Express Mail	IAB	N/A	3,763	0.6%
Global Parcel Svc	IAB	N/A	1,049	0.2%
Total	Sum of Lines 1 thru 6		643,807	100.0%
SIRV/I	L.1 + L.3		634,661	98.6%
IAB	Sum of Lns. 2, 4, 5, & 6		9,146	1.4%
			643,807	100.0%

Source: Table III-5, Summary of Revenues, Volumes, and Attributable Cost characteristics defines a mailflow for sampling purposes. Sampling fractions differ between surface and air transportation. When the Service selects a mailflow day, a systematic sample of inbound mail containers is selected at the destination exchange office. The data technician records the gross weight and the tare weight of the container, the number of pieces in the container, and for each piece, whether it is a letter, a flat, a packet, or a parcel. The technician also records the number of containers available for sampling that day. Source 1, p. 8-1.

Using the expanded<sup>1</sup> piece and weight data from the SIRV/I, the Service estimates pieces per kilogram (based on gross weight) by country and transportation mode. This produces a measure of pieces per kilogram for (1) Surface LC/AO; (2) Air LC/AO; and, (3) ISAL. These estimates align with lines 1 and 3 of Table C-2 where ISAL is included in Surface LC/AO. To develop the annual piece volumes by country and transportation mode, the Postal Service multiplies the total kilogram weight of inbound mail for each foreign origin country and transportation mode by the corresponding estimated pieces per kilogram. According to the Postal Service, this is a standard method for calibrating a sample estimate to the universe that takes advantage of the positive correlation between weight and pieces. Source 1, p. 8-4. In the case of countries with very small sampled volumes, the Postal Service uses the UPU or the EURB average pieces per kilogram, as applicable, rather than the specific country estimate. Source 1, p. 6-2 and Source 5, pp. 52 and 53.

Having described how the Postal Service estimates annual volumes for LC/AO, parcel post, international express mail, and M-bags, a discussion of the development of inbound revenues follows. This process is conceptually straightforward since the rates are known for terminal dues (LC/AO and M-bags), inward land charges (parcel post), and imbalance charges (EMS). However, the rates for LC/AO differ between Canada, UPU countries, and the European Bilateral countries. For parcel post, each country publishes its own inward land charges annually. For EMS, the U.S. Postal Service maintains bilateral agreements with other countries. Further, since all the rates for terminal dues, etc., are in terms of SDRs (Special Drawing Rights), the Postal Service must use the applicable exchange rate to convert SDRs to U.S. dollars. To calculate the revenue for inbound mail, the Postal Service aligns the applicable volumes with the applicable rate for terminal dues, etc., with the applicable exchange rate, and multiplies the three numbers. Source 1, p. 6-l.

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<sup>1</sup> Raw sample estimate divided by the sampling rate or sampling fraction to obtain the estimate for the entire population.

The agreement with Canada for LC/AO mail contains separate rates for letters and flats. To accommodate this agreement, the U.S. Postal Service maintains a separate system for accumulating Canadian revenue and volume information. The system also covers parcel post. The development of revenue for inbound Canadian mail follows the same calculation procedure described above. Source 1, pp. 6-1 and 6-3.

Since this procedure provides imputed values for inbound revenues, the Postal Service adjusts the revenues for each UPU service so that, in aggregate, they match the total revenues included in the Domestic RPW Report. Source 1, p.6-3.

Finally, the aggregate revenues for air conveyance dues and transit fees are obtained from the Postal Service's revenue accounts. Source 1, p. 6-3. Air conveyance dues are the revenues the Postal Service receives for transporting inbound mail by air to its destination. Transit fees are the revenues the Postal Service earns for forwarding mail from one foreign country to another.

(3) The Development of Attributable Costs for the Standard Services based on the PRC Costing Methodology

There are six generalized components for international mail costs: (1) mail processing; (2) delivery (in-office and street), (3) domestic transportation; (4) international transportation; (5) settlement charges; and, (6) "all other" costs (primarily costs that piggyback on the directly variable costs). This categorization accounts for all cost elements in the Domestic Cost Segments and Components Report and the Domestic CRA, which has a line item for international mail.

Outbound services incur domestic mail processing, domestic transportation, international transportation, terminal dues (the cost of delivery in the destination foreign country), and applicable "all other" costs. Outbound services do not incur domestic delivery costs. Inbound mail incurs domestic mail processing, domestic transportation,

delivery, and applicable **all** other costs. Inbound mail does not incur settlement charges or international transportation costs.

**Mail Processing Costs.** Mail processing costs are based on Management Operating Data System (MODS) activity costs and In-Office Cost System (IOCS) distribution keys. The MODS system organizes mail processing costs into specific activity pools for which there are corresponding IOCS distribution keys. The distribution keys are used to allocate the MODS activity costs to each international service. In the ICRA, PRC Version, the Postal Service applied the cost variability factors utilized in the Commission's most recent recommended decision (Docket No. R97-1). In Docket No. R97-1, the Commission concluded that the variability factor for mail processing cost should be 100 percent. Differences in variability estimates and distribution keys distinguish the Commission's costing methodology from the Service's. For ease of presentation, the ICRA includes some costs under the heading "process" that are not traditionally incorporated there. These costs include all the costs of supervision (Cost Segment 2) and the remaining clerk and mailhandler cost that is not related to mail processing (Cost Segment 3).

**Delivery Costs.** The in-office carrier costs and street costs (city and rural) also follow the Commission's recommended costing procedure. The Commission's approach includes volume variable cost and the incremental cost that arises when only one subclass of mail is delivered to a business or residence. In contrast, the Postal Service prefers to assign only the volume variable cost.

**Domestic *Transportation* Cost.** Both inbound and outbound mail incur domestic transportation costs. These costs come from the applicable expense categories in the Book of Accounts. Source 1, p. 2-1. The Service's transportation cost system, TRACS, is used to develop distribution keys to distribute the Book of Accounts' expenses among the domestic subclasses and the international mail services. TRACS collects volumetric data on both outbound and inbound mail in sufficient detail for most expense categories. See Source 6. Where the volumetric data are insufficient for the distribution of

attributable cost to international mail categories, the Service develops a distribution key using data from the SIRV/O and the SIRV/I in combination with the density data (pounds per cubic foot) underlying the Domestic RPW report. In these instances, the ultimate distribution key is cubic feet of mail. Source 1, p. 2-1.

According to the Postal Service, with the exception of Canada, sample size limitations prevent it from obtaining reliable figures by which attributable domestic transportation costs can be separated by foreign origin or destination countries. Source 1, p. 2-1. Thus, there is no breakdown of domestic transportation cost by country or country group.

The Postal Service also determined that, with respect to Express Mail and Global Priority Mail, the TRACS system had sampling limitations related to TRACS Passenger, the Eagle network, and the Western network, all of which handle expedited mail. Accordingly, the Service used information from SIRV/O and RPW to distribute the costs among the appropriate categories. Source 1, pp. 2-2 and 2-3. The Postal Service believes this approach provides more accurate reporting and reflects the similarity in transportation costs between International Express Mail and Global Priority Mail. Source 1, p. 2-2.

*International Transportation Cost.* The costs for transporting mail from U.S. Postal Service dispatching points to foreign countries are kept in the Book of Accounts and apply only to outbound mail. Source 1, p. 4-1. The International Accounts Branch (IAB) maintains international transportation costs and kilograms by country. According to the Postal Service, it develops cost by mail category and country groupings in four steps. First, using the IAB data, the Service develops unit cost (*i.e.*, cost per kilogram) by country and mail category. Second, unit costs are multiplied by category volumes for each country to develop total cost. Third, country totals are grouped into the appropriate rate groupings, as applicable. Fourth, the group totals are adjusted to match the book of account totals. Source 1, p. 4-1.

Highway costs for Canada and Mexico are developed separately using analogous domestic unit costs. The Service also uses assumptions concerning the proportion of mail destined to Canada and Mexico. The Service assumes that for mail to Canada, 75 percent of the surface mail and 10 percent of airmail moves by highway. For Mexico, it assumes that 100 percent of surface mail and 0 (zero) percent of airmail moves by highway. Source 1, p. 4-4.

**Settlement Costs.** Settlement costs apply only to outbound mail. The costs represent payments to foreign countries for delivering U.S. Mail. The settlement charges for LC/AO mail are referred to as *terminal dues*. For parcel post, the term is *inward /and charge*. For Express Mail, the term is *imbalance charge*. For air LC/AO and air parcel post, there is an additional charge referred to as *&conveyance dues*. This charge applies to mail receiving air transportation in the destination country. There is also a transit fee that applies to mail originating in one country and moving through a second country for destination in a third country. Source 1, pp. 5-1 and 5-2.

U.S. outbound LC/AO mail is subject to three terminal dues regimes: (1) UPU countries, (2) EURB, and (3) Canada. The EURB terminal dues rates have per-piece and per-kilogram elements. The UPU rate is a per-kilogram rate. The Canadian rates are shape based. Source 1, 5-3.

Inward land charges, air conveyance dues and transit rates for parcel post vary by country and are independent of UPU and EURB groupings. The rates are on a per-piece and per-kilogram basis. The UPU specifies the allowable charges for Air conveyance dues and transit fees for LC/AO mail. Source 1, 5-2, 5-3 and 5-9.

EMS imbalance charges also vary by country. Some of the rates are reciprocal, i.e., the U.S. Postal Service pays the foreign postal administration the same rate the foreign postal administration pays to it. The reciprocal rates for some countries reflect a two-tier system that differentiates between documents and merchandise. According to the Postal Service, this distinction corresponds to customs arrangements. The two-tier system also applies in some countries where private couriers, rather than the Postal

Administration, deliver EMS. The remainder of imbalance charges vary widely by country. Source 1, p. 5-4.

The Service's methodology for computing settlement charges requires the outbound volumes by country, mail category (LC/AO, Parcel Post, and EMS), transportation mode, the applicable settlement charge, and the appropriate exchange rate. Multiplying the volumes for each country by the applicable settlement charge and exchange rate yields settlement cost. Source 1, pp. 5-1 and 5-2. Except for EMS, the outbound volume data are obtained from the SIRV/O. They not only support the calculation of settlement costs, but are also used for calculating international transportation costs discussed earlier, Source 1, p. 5-1 and 5-4.

Settlement costs, calculated as described above, are imputed costs. The Postal Service does not attempt to reconcile the imputed cost to the Book of Accounts cost because the accounting procedures are not well suited to the task. Source 1, p. 5-1. In FY 1998, the total booked settlement cost amounted to \$547,738.5 (000); while the imputed costs amounted to \$477,496.7 (000). Thus, the booked costs exceeded the imputed costs by \$70,242 (000). In a response to a Commission inquiry, the Postal Service stated that the imputed costs are based on FY 1998 volumes and reflect the different conversion rates in effect for calendar years 1997 and 1998. In contrast, the booked costs reflect five items that are not the result of FY 1998 volumes or rates: (1) prior year adjustments; (2) a fixed conversion rate; (3) the difference between the fixed conversion rate and the current rate is assigned to general ledger accounts; (4) some settlement payments are provisional; and (5) accruals are conservative to avoid underestimating expenses. For these reasons, the Postal Service treats these costs as incremental to all international mail as whole.<sup>2</sup> Source 7, Response to Item 10. This will be discussed further below.

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<sup>2</sup> On June 7, 1999, the Postal Service submitted a new FY 1998 ICRA Report - Postal Service Version. The report contained a revised methodology for calculating international transportation cost and a different treatment of the difference between imputed settlement charges and the settlement charges in the book of accounts. Because of time constraints, the Commission has not been able to evaluate the



**“All Other” Costs.** “All other” costs include all attributable costs not included above. These are mostly cost items that both the Service and the Commission treat as varying in proportion to directly variable cost. These costs include the costs of some lower level regional and headquarters administration, rents, fuels, utilities, supplies and services, and other support costs. There are also supervisor costs and clerk and mailhandler costs for window service and administrative support included here.

#### **(4) The Development of Attributable Costs for the Initiatives**

The cost allocations for International initiatives, with the exception of GPM, are derived from data gathered outside of the Postal Service’s main data collection systems. The Postal Service has indicated that the initiatives are seldom observed in the data collection systems used for the higher-volume international mail products. This section describes the Postal Service’s costing methodology for each of the initiatives.

**Global Package Link.** The GPL model used by the Postal Service to track cost and revenue information consists of a series of linked spreadsheets. The model was developed to determine the institutional cost contribution of GPL. Calculating GPL’s contribution requires calculation of the product’s attributable cost for each postal accounting period (AP) using existing sources of data for GPL revenue, pieces, and weight. Source 10, p. 275.

Costs are allocated to GPL based on an engineering approach. Each step “involved in processing, transporting and delivering mail is mapped out. Each step is classified as variable with piece, with volume, or with some other criterion, or fixed with respect to volume. Then, costs for each step are summed.” Source 3, Response to Item 9. The attributable cost components included in the GPL model are: verification labor, domestic shipping, processing labor, facilities and equipment, international

classified as variable with piece, with volume, or with some other criterion, or fixed with respect to volume. Then, costs for each step are summed.” Source 3, Response to Item 9. The attributable cost components included in the GPL model are: verification labor, domestic shipping, processing labor, facilities and equipment, international transportation, international settlement, IBU contractors, IBU administrative, and other charges and expenses. Excluded costs are institutional costs not attributable to specific postal products. These include headquarters general and administrative expenses. Source 10, p. 275.

The model uses volume data from the Postal Service’s Revenue, Pieces, and Weights system. Costs are manually input, based on reports from Postmasters at the facilities where GPL is processed. Source 10, p. 282. “Customer verification rate is the average hours spent per shipment verifying GPL.” Source 3, Response to Item 7. Contract highway service costs are obtained by contacting postmasters or GPL account representatives. Domestic shipping rates are per minute costs for vehicle service drivers and per mile costs for contract highway routes that are not dedicated to GPL. These costs are determined by separate analyses. International transportation rates are calculated in the GPL model using the highest international airmail rates for Express GPL and the Surface Airlift Rates for Standard and Economy GPL. Source 3, Response to Item 7.

In addition to the volume variable cost, the Postal Service also included product-specific costs in the amount of                      These expenses are causally related to GPL, but do not vary with marginal volume changes. They include advertising and promotional activities and other related business expenses. Source 7, Response to Item 9.

**Global Priority Mail.** GPM costs are estimated “by using In Office **Cost** System (IOCS) tallies, domestic transportation information and other elements of the process used for most other categories of international mail, including the identification of product-specific costs.” Source 3, Response to Item 9. As in the case of GPL, there

Global Direct Services (Direct *Entry/Inbound*). The costing methodology for Global Direct Services varies by country, reflecting the operational specifics of the service that is provided to each customer. The Postal Service provided service to or from three countries during FY 1998:

**Canada.** Mail going to Canada can have either of two different rates for terminal dues. The terminal dues rate is either taken from the mailing statements or is calculated at a fixed rate, which is then converted from Canadian to U.S. currency and multiplied by pieces. For domestic transportation, the highway contract rate is used. The standard Department of Transportation (DOT) international airmail rates are used for the international air transportation cost. An acceptance clerk cost per piece taken from the 1997 CRA report in Cost Segment 3.2 under the Window Service Category is added. Source 1, p. 9-5.

**Brazil.** The IBU provides the settled terminal dues by mailing. Domestic transportation is based on a highway truck rate per mile multiplied by the distance between the domestic acceptance site and the international mail facility. The standard DOT international airmail rates **are** used for the international air transportation cost. An acceptance clerk cost, identified from an international mail processing study, is also added. Source 1, pp. 9-4 and 9-5.

**Great Britain.** Costs for Direct Entry Great Britain are attributed based on the cost segment distribution of Standard Mail (A) Regular from the 1997 CRA. For Cost Segment 14, a weight per piece ratio is used in order to determine a weight-based cost for transportation. Source 3, p. Q-4.

These services consist of both outbound (US origin) and inbound (foreign origin) mail. The following table shows the breakdown of the two types of mail for FY 1998.

**TABLE C-3**

**GLOBAL DIRECT MAIL**

Category	Revenue \$(000)	cost \$(000)	Contribution \$(000)	Pieces (000)	Weight (lbs) (000)
Outbound (US Origin)					
Inbound (Foreign Origin)					
Total					

Source: Source 11, Response to Item 1.

The volume is predominantly outbound mail. The small numbers in the inbound entries in Table C-3 illustrate the difficulty of using the Postal Service's major data collection systems for tracking the costs of initiatives.

*Global Parcel Services.* The GPS volume and revenue report is in a database maintained by the International Accounting Branch (IAB). The dispatch data are entered daily and the accounting period report is based on this information. Specific revenue data are taken from the Financial Accounting Cost Tracking System (FACTS). The data are sent from International Finance to the IAB on an accounting period basis. Source 1, p. 9-I.

Costs for GPS are determined by using a proxy. The volume characteristics of GPS are applied, on an accounting period basis, to the unit cost for Domestic Priority Mail as identified in the 1997 Cost and Revenue Analysis (CRA) report for costs excluding transportation. For transportation, calculations are based on a unit cost, and adjusted for the difference in the weight per piece ratio between Domestic Priority and GPS. Source 1, p. 9-5.

*International Customized Mail.* In FY 1998, ICM service offered access to five existing services: ISAL, IPAS, EMS, ValuePost, and Air/Surface Parcel Post on terms adapted to specific customers. Generally, the costs associated with service specific ICM customers are developed using the average costs of the applicable service (ISAL,

etc.) for settlement costs, international transportation charges, and processing costs. In some cases, only an acceptance cost is used rather than full processing costs to reflect the specific operations of the particular **ICM** service. Source 1, p. 9-3 and 9-4.

The lone exception to this methodology is the cost incurred by **ICM** customers that use the Postal Service's Air or Surface Parcel Post. For these customers, the Postal Service develops costs using the cost coverage for the standard Air and Surface Parcel Post categories. Source 1, p. 9-4.

#### (5) international Mail Service Incremental Costs

The Postal Service has included costs that it views as incremental to International Mail as whole. The cost has two components. The first component reflects the difference in settlement charges between imputed costs used in the **ICRA** as attributable settlement cost and the booked cost in the system of accounts. This cost amounted to \$52,203 (000) in FY 1998 and was discussed in the earlier section on the development of settlement cost. The second component reflects expenses for the **IBU** that amounted to \$70,242 (000) in FY 1998. **ICRA** Report, p. A-I, footnote 1. The reported amount includes the salaries and benefits for **IBU** personnel, supplies and services, rents, utilities, and other related expenses. Source 3, Response to Item 4. Together, these expenses amount to \$122,445 (000).

These costs cannot be causally related to specific international mail services on the basis of current information, but can be causally related to international services as a whole.

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DERIVATION OF APPROXIMATIONS  
FOR ATTRIBUTABLE COST PER PIECE (ACP)  
AND ITS COEFFICIENT OF VARIATION (CV)

The Attributable Cost per Piece (ACP) for a domestic subclass or international category of mail is derived by the United States Postal Service (USPS) for its annual Cost and Revenue Analysis (CRA) and International CRA (ICRA) reports using a formula that combines in a nonlinear way estimates of volume-variabilities, distribution key shares and mail volumes produced by a number of postal data systems and special econometric studies. In most Postal Service material ACP is referred to **as** Unit Volume-Variable Cost (UVC). Individually, the coefficients of variability for these estimates (the standard deviation of the error of the estimate divided by the estimate) are often a product of the sampling process or econometric fit that produced the estimate and are known to USPS. Furthermore, there is little interdependence between USPS data systems and/or special studies so the errors that arise in estimates of volume-variabilities, distribution key shares and mail volumes, as they appear in the formula for a single subclass or category, can be expected to be uncorrelated and approximately normally distributed. In the absence of non-sampling errors, the expected value or mean of the errors will also be zero. These assumptions are nearly identical to the assumptions made by the study team in the recently concluded study of the quality of several principal USPS data systems.

The purpose of this Technical Appendix is to derive and to apply formulas to calculate accurate approximate values for expected ACP and its coefficient of variation (CV) under these assumptions and using no more information than the estimates of volume variability, distribution key shares, and mail volumes, and the estimates of the **CVs** of these variables, as provided by USPS. The formulas are approximations for five reasons. First, the derivation uses a second-order Taylor series expansion of the formula for ACP; thus the effect of third and higher-order terms in the Taylor series is presumed to be negligible. Second, virtually all of the errors in the estimates found in the formula for AGP are lower-bounded; however, the normal distribution is not. Consequently, the